



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,775	12/27/2001	Masaru Seita	51344	9021

21874 7590 03/15/2005

EDWARDS & ANGELL, LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
KRUEER, KEVIN R	
ART UNIT	PAPER NUMBER

1773

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,775

Applicant(s)

SEITA ET AL.

Examiner

Kevin R Kruer

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,4,5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsi-Lui (US 5,61,995) in view of Chen et al (US 5,989,653) for reasons of record.

Hsi-Lui teaches a polymer surface adaptable for the acceptance of metal deposits prepared by contacting a clean, non-active, unconditioned polymer surface with a liquid activating composition containing at least one reactive conditioning agent selected from an acidic medium, salts of an acidic medium, a metal hydroxide, and a metal oxide (abstract). The polymer surface is then contacted with a metal ion selected from the group consisting of platinum, palladium, silver, gold, iron, nickel, cobalt, copper and rhodium to form an activated polymer surface (col 5, lines 46+). The surface containing the metal ion is subsequently reduced (col 5, lines 55+). The surface may be further plated with another metal layer by chemical deposition, electroless deposition (col 5, lines 71+), or electroplating (Col 6, lines 35+).

The treatment of the plastic surface with a reactive conditioning agent is understood to read on Applicant's claimed "ion exchange group introduction treatment." Specifically, Applicant states an "ion exchange group introduction treatment" includes treatment with any chemical agent that can introduce groups having ion exchange capacity into the resin base. Such chemical agents include Lewis acids and Lewis

Art Unit: 1773

bases (paragraph 0030 of the specification). Each of the reactive conditioning agents taught by Hsi-Lui is either a Lewis acid or Lewis base.

Hsi-Lui does not teach that the activated polymer surface or the plated activated polymer surface may be hot pressed in order to improve the binding strength between the polymer and metal coating (see paragraph 0003 of the specification). However, Chen teaches that heating a substrate after electroless plating can significantly increase adhesion of the metallization to the substrate (col 5, lines 39+). In general, long exposure to temperatures sufficient to soften the substrate promotes adhesion. For example, heating can remove moisture at the polymer-metal interface that reduces bonding strength. Heating can also cause oxidation of the metal at the polymer-metal interface, which can increase bonding strength and improve adhesion (col 5, lines 39+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the metal plated plastic substrate taught in Hsi-Lui after the electroless plating. The motivation for doing so would have been to improve the interlayer adhesion of the metal plated plastic substrate.

The examiner notes that the metal-plated plastic substrate taught by Hsi-Lui in view of Chen is not "hot-pressed" as claimed in claim 1. However, the metal-plated plastic substrate taught by Hsi-Lui in view of Chen renders the claimed composite obvious because the metal plated plastic substrate is structurally identical to the claimed composite. Specifically, Hsi-Lui in view of Chen teaches a metal plated plastic substrate that is post-treated so that the adhesion between the metal and the plastic substrate is greater than adhesion of the metal and the plastic substrate prior to post-

treatment. The courts held that a method of making a product does not patentably distinguish that product from a product taught by the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, there is no such showing.

With regard to claimed binding strength of claim 1, Chen teaches that the binding strength between a plastic substrate and a deposited metal layer may be optimized by baking the metal plated plastic substrate. The courts have held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (See MPEP 2144.05). In the present application, Chen teaches that binding strength of a metal plated plastic substrate is a result effective variable that can be optimized by baking. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the binding strength of the metal plated plastic substrate taught by Hsi-Lui by baking the composite. The motivation for doing so would have been to obtain a composite with the desired binding strength.

With regard to claim 5, Hsi-Lui in view of Chen does not teach the claimed method limitations. However, the metal-plated plastic substrate taught by Hsi-Lui in view of Chen renders the claimed composite obvious because the metal plated plastic substrate is structurally identical to the claimed composite. The courts have held that a method of making a product does not patentably distinguish the claimed product from a product taught in the prior art unless it can be shown that the method of making the

product inherently results in a materially different product. In the present application, there is no such showing.

Response to Arguments

Applicant's arguments filed December 20, 2004 have been fully considered but they are not persuasive.

Applicant argues that the prior art does not teach or suggest that the binding strength of the metal layer to the polymeric material may be improved by hot-pressing. Applicant acknowledges that the reference teaches heating a resin base after electroless plating in order to "increase adhesion of the metallization to the substrate (col 5, lines 39-53) but does not teach or suggest the use of pressure. The examiner acknowledged in the non-final rejection mailed 9/21/2004 that the prior art does not teach that the resin base and the metal should be subjected to *both* heat and pressure. However, the metal-plated plastic substrate taught by Hsi-Lui in view of Chen was considered to render the claimed composite obvious because the metal plated plastic substrate is structurally identical to the claimed composite. Specifically, Hsi-Lui in view of Chen teaches a metal plated plastic substrate that is post-treated so that the adhesion between the metal and the plastic substrate is greater than adhesion of the metal and the plastic substrate prior to post-treatment. The courts held that a method of making a product does not patentably distinguish that product from a product taught by the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, there is no showing

of record that hot pressing the resin base and metal layer together will result in a materially different product than that rendered obvious by the prior art.

Therefore, Applicant's arguments are not persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

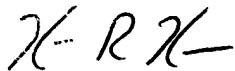
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "K R K", with a stylized flourish at the end.

Kevin R. Kruer
Patent Examiner-Art Unit 1773